IEEE EMC Society Chapter Meeting Announcement
The Rocky Mountain, Twin Cities, Central Texas, Phoenix, Seattle, San Diego, Sweden, and Washington DC/Northern Virginia EMC Chapters, Together with ANSI C63®, Announce a LIVE Webinar:

The Emerging Implications of Wireless Coexistence on Modern Medical Environments

Date:		**Tuesday, December 8, 2020**
Time:	9:00 am PST	Welcome and Announcements – Dan Hoolihan, Chair, ANSI ASC C63®
	9:05 am	**Wireless Coexistence: What is It?** *By Jason Coder, Shared Spectrum Metrology Group Leader, National Institute of Standards and Technology (NIST), Boulder, Colorado*
	9:25 am	**Medical Device Wireless Coexistence Evaluation Framework** *By Mohamad Omar Al Kalaa, Staff Fellow Electrical Engineer, Center for Devices and Radiological Health (CDRH), U.S. Food and Drug Administration (FDA), Silver Spring, Maryland*
	9:50 am	**Verifying Coexistence Performance – A Review of Coexistence Test Methods and Environments** *By James Young, Director, Business Development, ETS-Lindgren, Cedar Park, Texas*
	10:10 am	Q&A with the speakers, moderated by Dan Hoolihan ***(See presentation abstracts and speaker bios below.)***
	10:30 am	Wrap Up/Final Comments

Register: Click here to register now on line or enter the following on your browser: https://attendee.gotowebinar.com/register/6172753247267297806

Questions: Janet O'Neil, ETS-Lindgren, cell (425) 443-8106, email j.n.oneil@ieee.org

TECHNICAL PROGRAM

Wireless Coexistence: What is It?
By Jason Coder, Shared Spectrum Metrology Group Leader, National Institute of Standards and Technology (NIST), Boulder, Colorado

Abstract: Wireless coexistence is a formidable problem that limits access and use of spectrum in today's connected world. End-users, system administrators, network planners, and regulators all desire to understand how their wireless devices, systems, or networks will perform amid many other wireless devices before they are deployed. Given this desire, how can we design tests that quantify a device's ability to coexist? To start, can we pin down what quantities represent good wireless performance? How should test results be interpreted? This talk will present an overview of the concept of wireless coexistence in general and outline some of the challenges

facing the community. The goal of this talk is to leave audience members with a better understanding of what coexistence is (or isn't) and a deeper understanding of how we can tackle coexistence problems to enable better access to spectrum.

Medical Device Wireless Coexistence Evaluation Framework
By Mohamad Omar Al Kalaa, Staff Fellow Electrical Engineer, Center for Devices and Radiological Health (CDRH), U.S. Food and Drug Administration (FDA), Silver Spring, Maryland

Abstract: Wireless coexistence evaluation is recommended in the FDA guidance document on radio frequency wireless technology in medical devices. The coexistence evaluation framework includes two FDA-recognized documents: AAMI TIR69 Technical Information Report "Risk management of radio-frequency wireless coexistence for medical devices and systems" and ANSI C63.27 "American National Standard for Evaluation of Wireless Coexistence". This presentation will provide a narrative for addressing wireless coexistence in medical devices. The discussion will cover the relationship between the specified medical device wireless function risk category and the test evaluation tier, specification of the device functional wireless performance (FWP), testing, and reporting test results.

Verifying Coexistence Performance – A Review of Test Methods and Environments
By James Young, Director, Business Development, ETS-Lindgren, Cedar Park, Texas

Abstract: Four measurement methods for coexistence testing are specified in ANSI C63.27: 1) conducted, 2) multiple chamber, 3) radiated anechoic chamber, and 4) radiated open environment. Conducted and open environment test methods will yield valuable information, but advanced wireless technologies like 802.11 n, Bluetooth Low Energy and 5G will likely require shielded anechoic test methods for repeatability and accuracy. Anechoic test methods are necessary when measuring MIMO antenna impact and spectrum sharing technologies which may be present in commercially available wireless modules. A review of each of the four coexistence test methods and measurement results that can be expected from each will be explored in this presentation.

SPEAKER BIOGRAPHIES

Jason Coder received his B.S.E.E. and M.S.E.E degrees from the University of Colorado Denver in 2008 and 2010, respectively. Mr. Coder currently leads the Shared Spectrum Metrology Group in the National Institute of Standards and Technology's Communications Technology Laboratory. During his tenure at NIST, Mr. Coder has worked in fundamental EM measurements, EMC, and antenna measurements. His current research focuses on developing new measurement methods for spectrum sharing, wireless coexistence, and interference. Mr. Coder currently serves as the Chair of the ANSI C63.27 working group on Wireless Coexistence, and the Chair of ANSI C63 Subcommittee on Spectrum Etiquette.

Mohamad Omar Al Kalaa received the Bachelor's degree in electronics and telecommunication from Damascus University, Damascus, Syria, in 2008, the M.E. degree in advanced telecommunication from the Ecole Nationale Superieure des Telecommunications de Bretagne, Brest, France, in 2012, and the M.Sc. and Ph.D. degrees in electrical and computer engineering from the University of Oklahoma, Norman, OK, USA, in 2014 and 2016, respectively. He is a Staff Fellow Electrical Engineer with the Center for Devices and Radiological Health (CDRH), U.S. Food and Drug Administration (FDA). His research interests include healthcare applications enabled by wireless technology, wireless coexistence of technologies in unlicensed bands, coexistence testing methodologies, cognitive radio, PHY and MAC design, and the application of machine learning in wireless communication. Dr. Al Kalaa currently serves as the co-chair of the medical device innovation

consortium (MDIC) 5G-enabled medical device working group and the secretary of the ANSI C63.27 standard for evaluation of wireless coexistence working group.

James Young is the Director of Business Development for ETS-Lindgren. He is responsible for researching industry and customer requirements and then building solutions and relationships that serve wireless, EMC, and medical customers. Mr. Young has spent nearly 20 years selling, designing, and installing wireless and EMC test systems. Prior to joining ETS-Lindgren, he worked at AMETEK CTS and Rohde & Schwarz in various engineering, sales, and marketing positions. His engineering background includes system, ASIC and FPGA design for various communication, wireless, and RF test products. Mr. Young holds a BSEET from Weber State University and an MBA from the University of Phoenix. He may be reached via email at james.young@ets-lindgren.com.

HOST AND MODERATOR

Daniel D. Hoolihan is currently President of Hoolihan EMC Consulting. His 50 years of experience in the EMC engineering profession began at Control Data Corporation. Since January 2000, he has been consulting in EMC engineering. He is presently Chair of the ANSI Accredited Standards Committee C63® on EMC. Mr. Hoolihan has been a member of the IEEE since 1983 and is currently a Life Senior Member. From 1998-1999 he was President of the IEEE EMC Society and has served on its Board of Directors for many years since 1987. He has held numerous leadership positions within the EMC Society and currently serves as Chair of the History Committee. Mr. Hoolihan received his MS degree in Physics from Louisiana State University in 1969 and his MBA from the University of Minnesota in 1975.